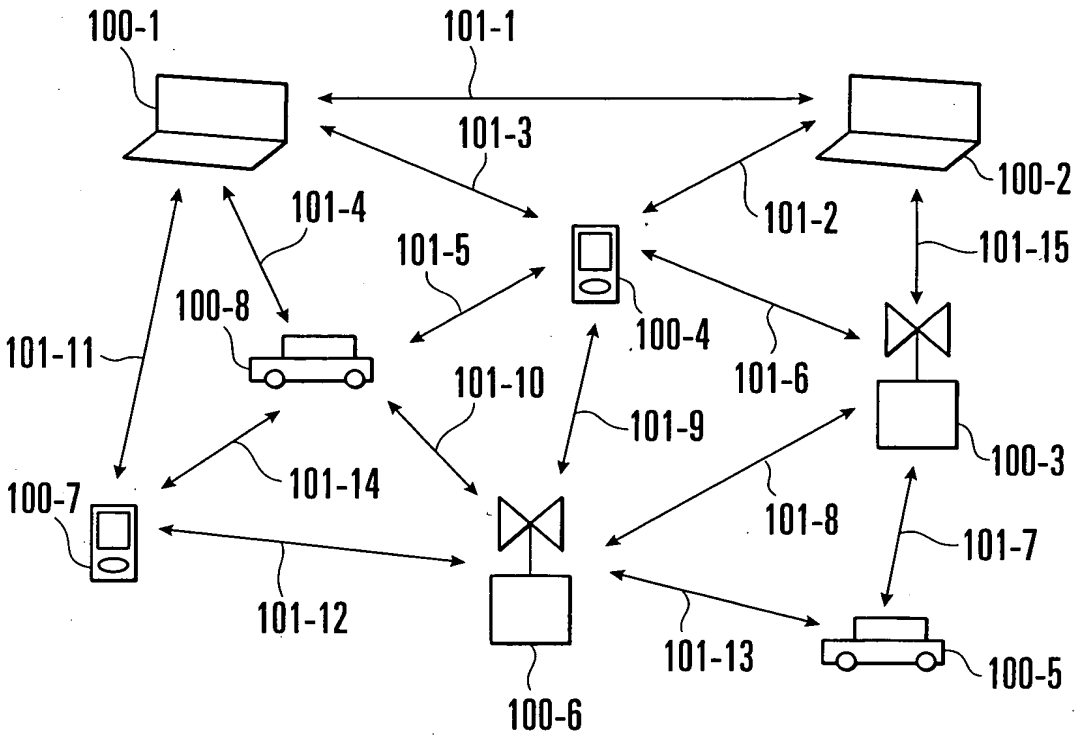

100-1
101-1
101-3
100-2
101-4
101-2
101-5
101-15
100-8
100-4
101-11
101-6
101-10
101-9
100-3
100-7
101-14
101-8
101-7
101-12
101-13
100-5
100-6

FIG. 1

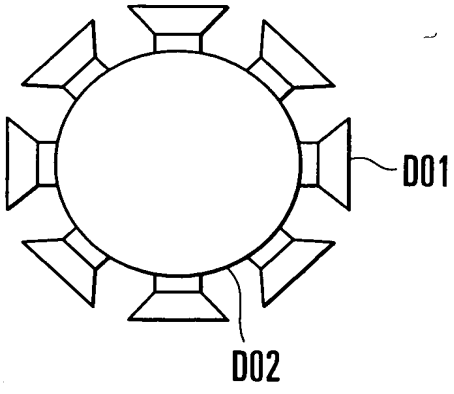

D01
D02

FIG. 2

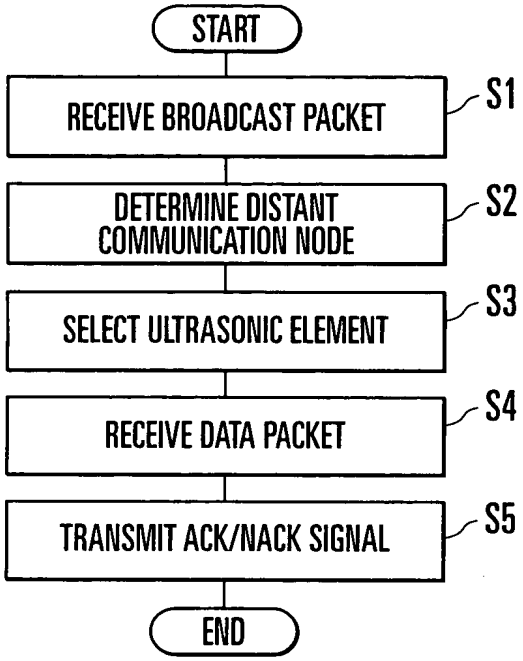

START
RECEIVE BROADCAST PACKET
S1
DETERMINE DISTANT COMMUNICATION NODE
S2
SELECT ULTRASONIC ELEMENT
S3
RECEIVE DATA PACKET
S4
TRANSMIT ACK/NACK SIGNAL
S5
END

FIG. 3

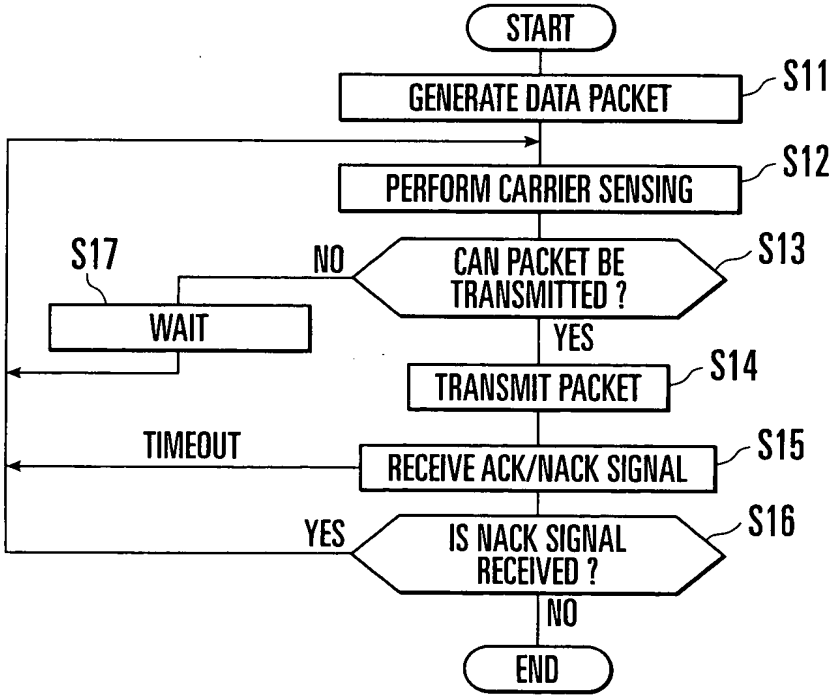

START
GENERATE DATA PACKET
S11
PERFORM CARRIER SENSING
S12
CAN PACKET BE TRANSMITTED ?
S13
NO
S17
WAIT
YES
TRANSMIT PACKET
S14
TIMEOUT
RECEIVE ACK/NACK SIGNAL
S15
YES
IS NACK SIGNAL RECEIVED ?
S16
NO
END

FIG. 4

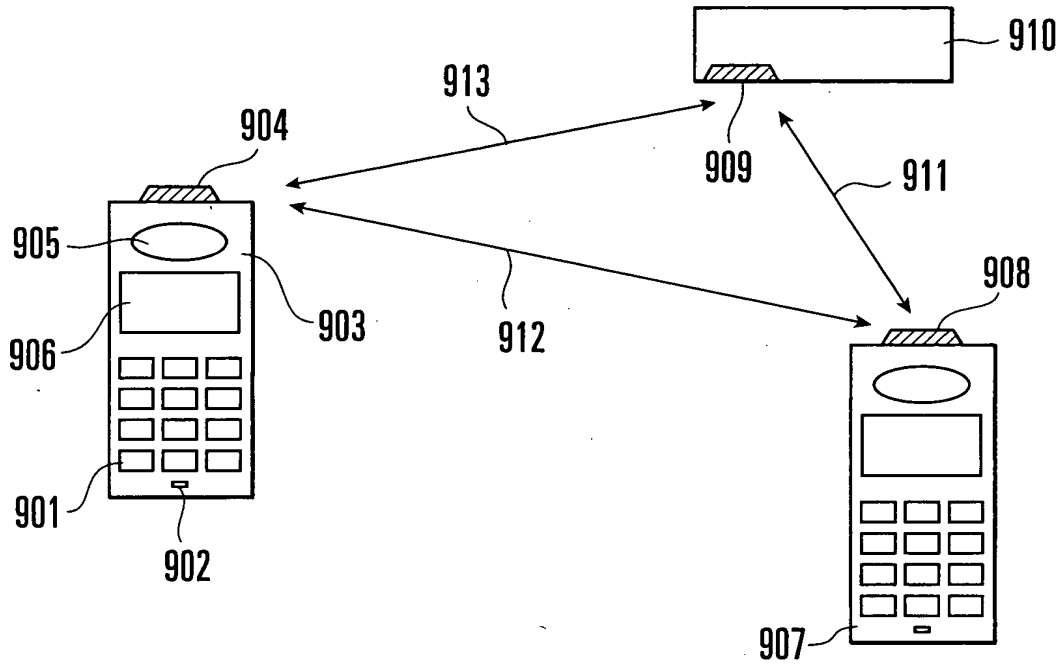

910
913
904
909
911
905
903
908
906
912
901
902
907

FIG. 5

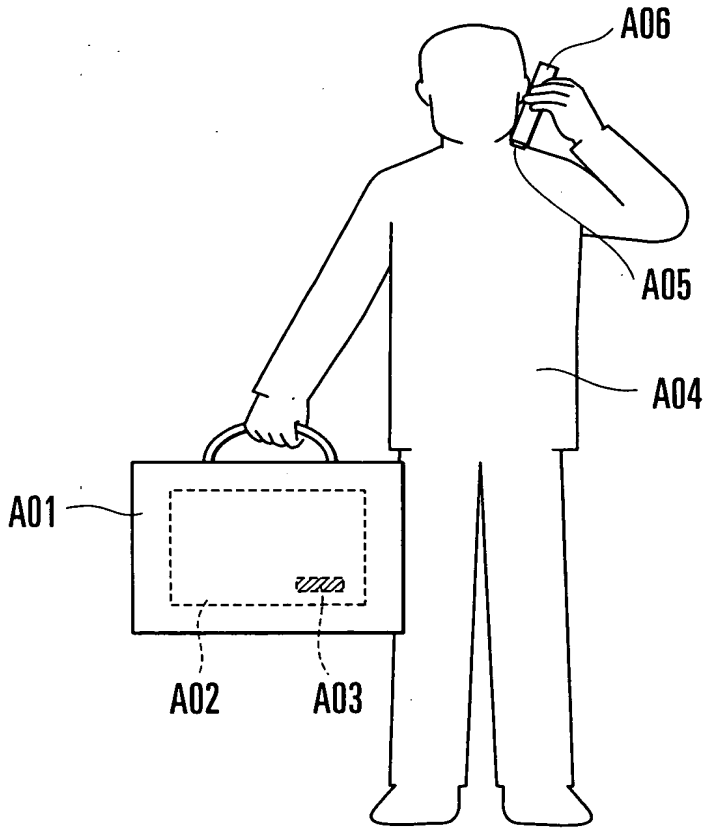

A06
A05
A04
A01
A02
A03

FIG. 6

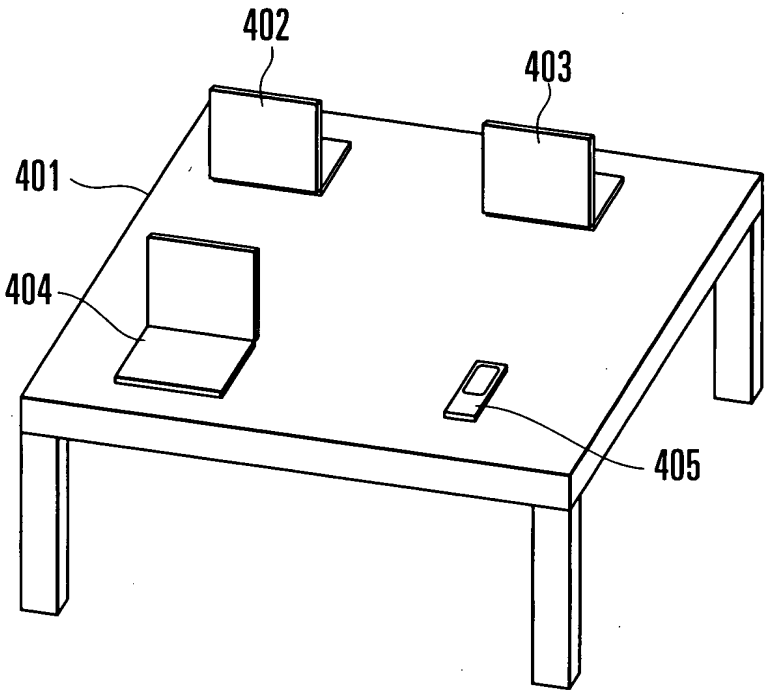


FIG. 7

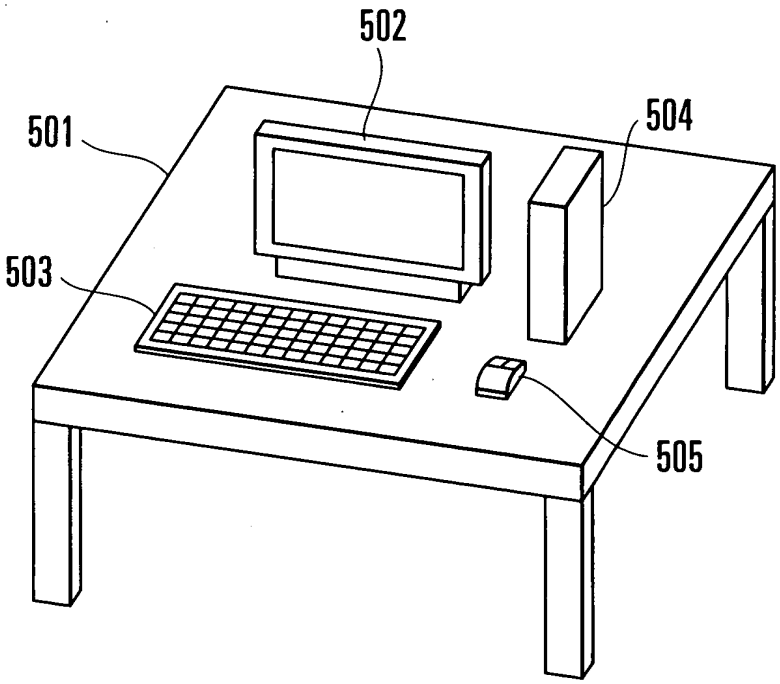


FIG. 8

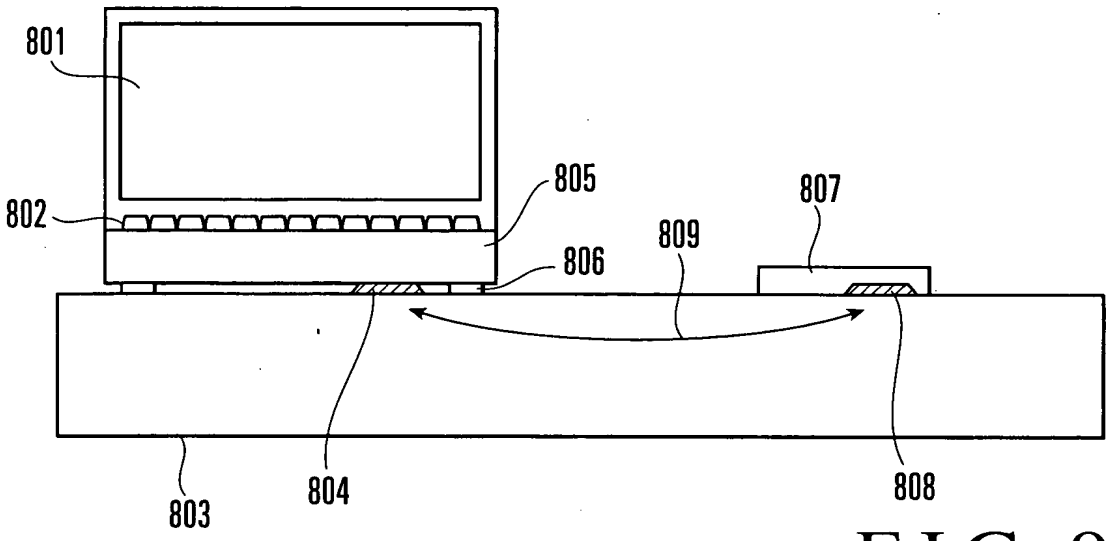
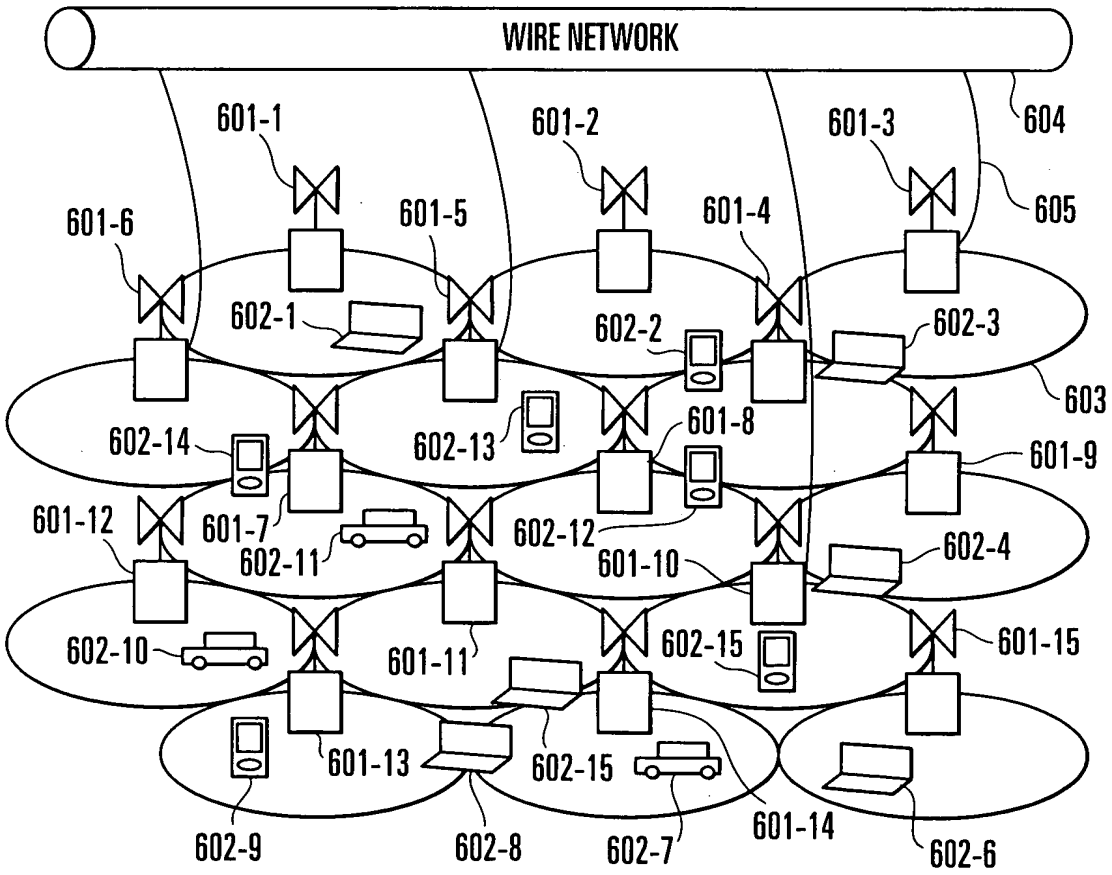

801
802
805
807
809
806
803
804
808

FIG. 9


WIRE NETWORK
604
601-1
601-2
601-3
605
601-6
601-5
601-4
602-1
602-2
602-3
603
602-14
602-13
601-8
601-9
601-12
601-7
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602-12
601-10
602-4
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602-15
601-15
601-13
602-15
601-14
602-9
602-8
602-7
602-6

FIG. 10

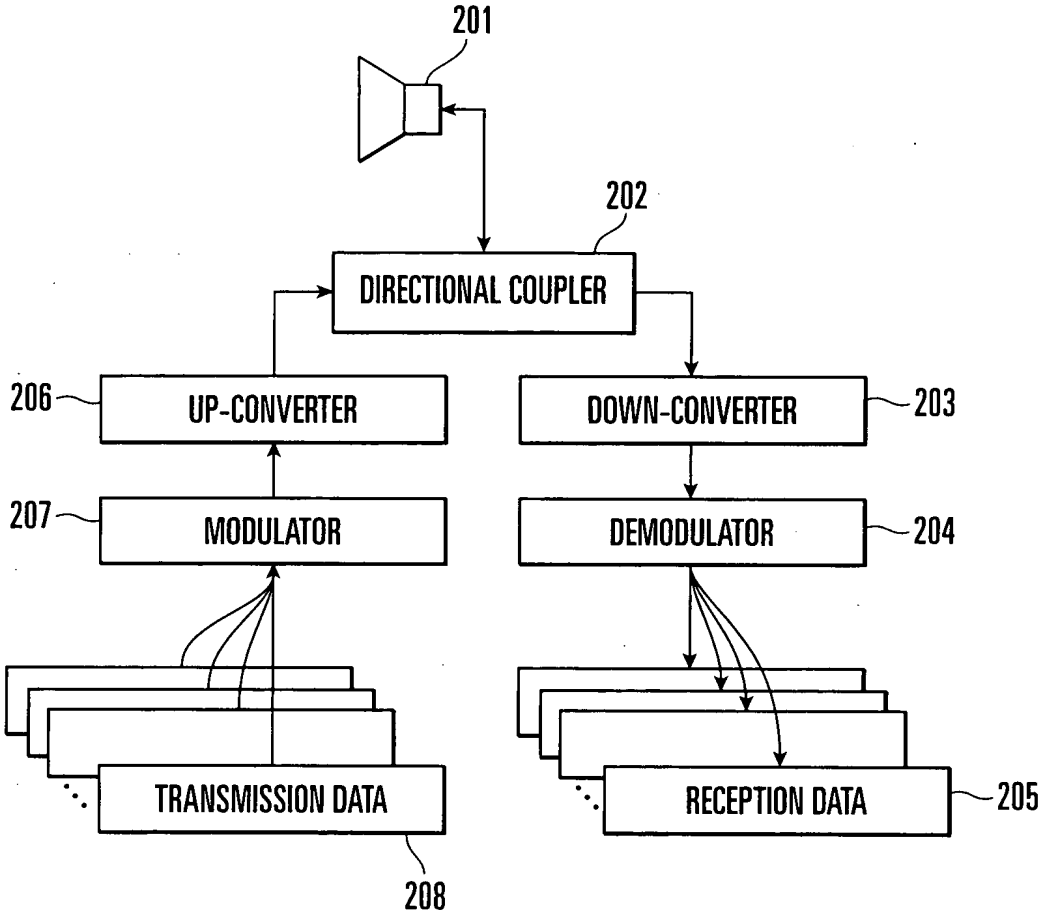
201
202
DIRECTIONAL COUPLER
206
UP-CONVERTER
DOWN-CONVERTER
203
207
MODULATOR
DEMODULATOR
204
TRANSMISSION DATA
RECEPTION DATA
205
208

FIG. 11

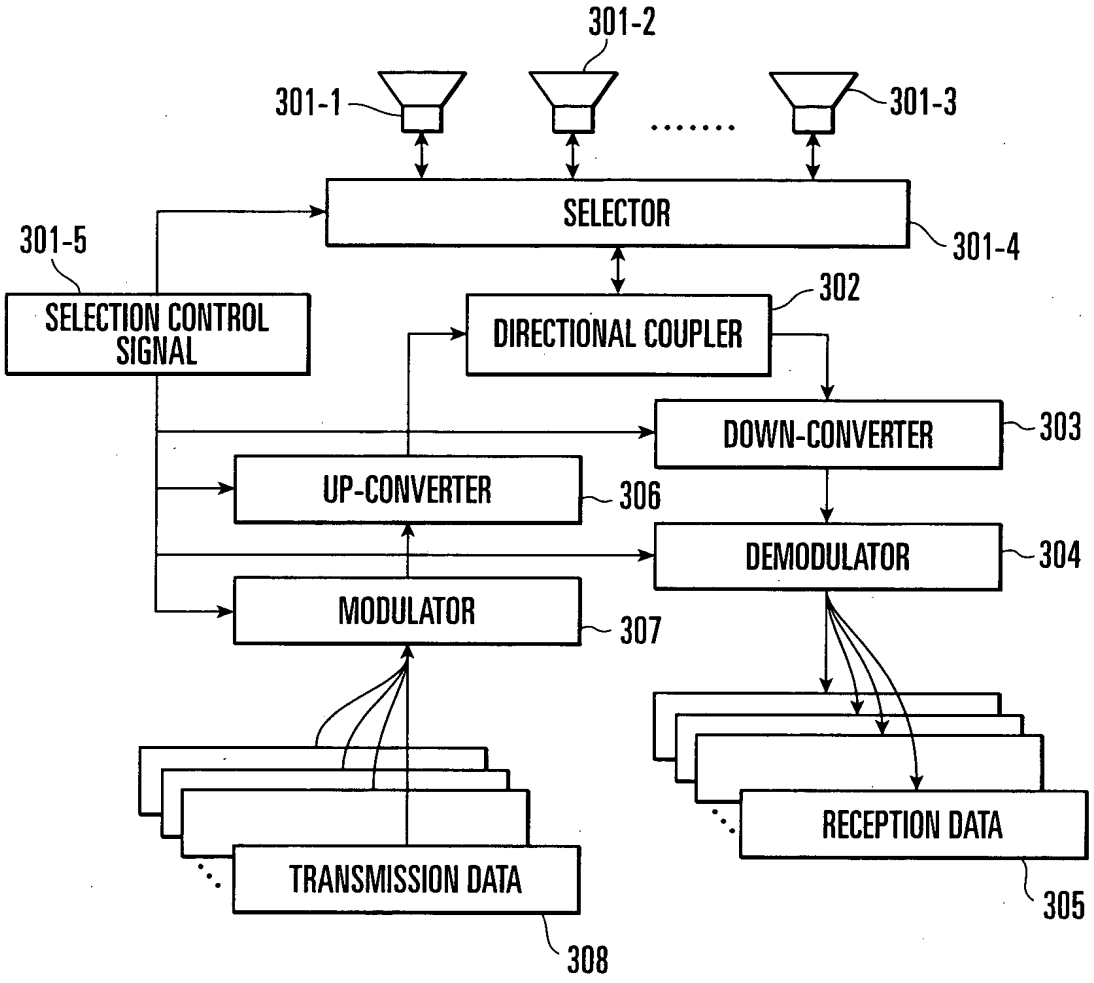

FIG. 12

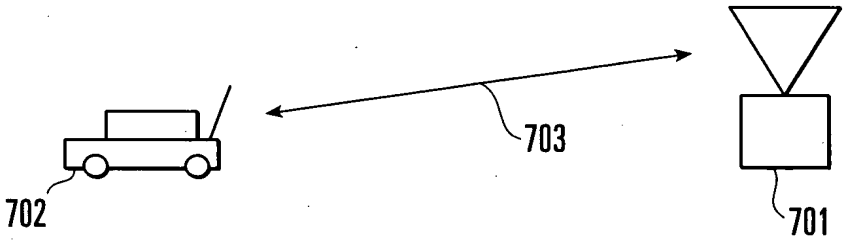

FIG. 13
PRIOR ART